

# MARITIME HERITAGE MINNESOTA

Ann Merriman  
Christopher Olson



## Minnesota Suburban Lakes Survey Project: Lake Pulaski Survey Report



Camping on Lake Pulaski, Buffalo, Minn.

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## Acknowledgments

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Front Cover: Bannochie 1928. Digitized by MHM.

### Maritime Heritage Minnesota Staff, Volunteers, Board of Trustees, & Mascots



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## Introduction

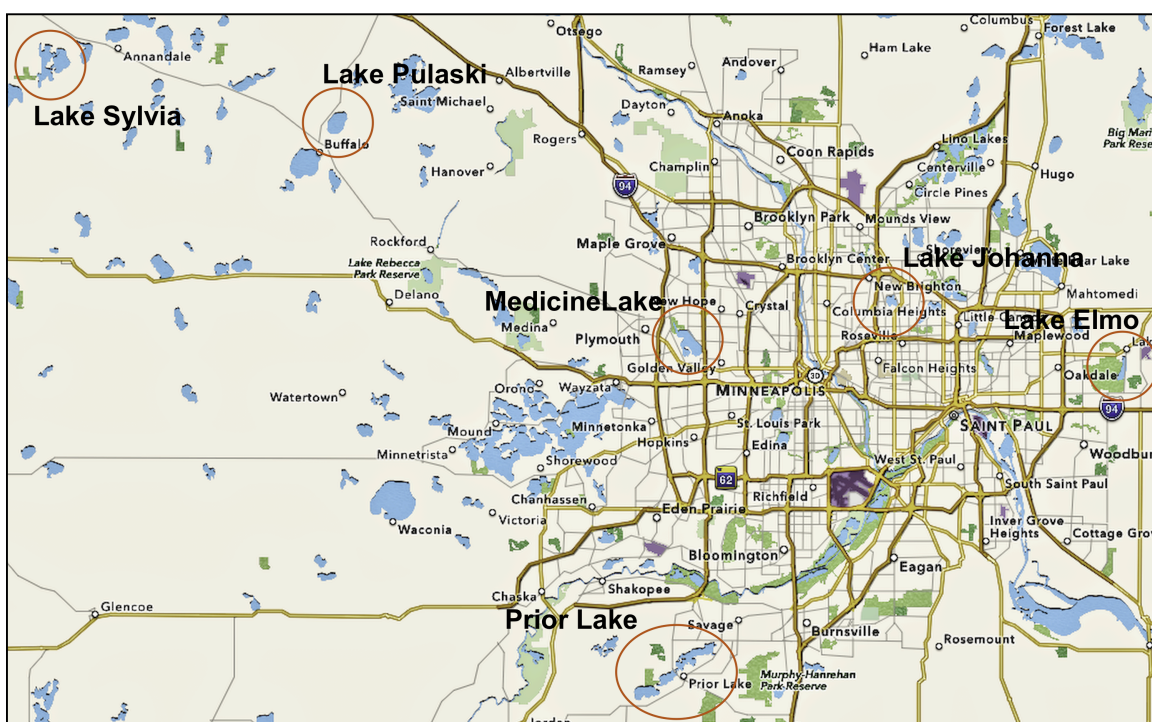
Wrecks and the artifacts associated with them tell a story. Removing or otherwise disturbing artifacts, treating them as commodities that can be sold, obliterates that story. Nautical archaeological and maritime sites are finite, and are significant submerged cultural resources. Nautical, maritime, underwater, maritime terrestrial – Maritime Heritage Minnesota's (MHM) deals with all of these types of sites throughout the State of Minnesota. MHM's Mission is to document, conserve, preserve, and when necessary, excavate these finite cultural resources where the welfare of the artifact is paramount. MHM is concerned with protecting our underwater and maritime sites – our shared Maritime History – for their own benefit in order for all Minnesotans to gain the knowledge that can be obtained through their study. MHM's study of wrecks does not include the removal of artifacts or damaging the sites in any way. MHM does not raise wrecks or 'hunt' for 'treasure'. Submerged archaeological sites in Minnesota are subject to the same State statutes as terrestrial sites: the Minnesota Field Archaeology Act (1963), Minnesota Historic Sites Act (1965), the Minnesota Historic District Act (1971), and the Minnesota Private Cemeteries Act (1976) if human remains are associated with a submerged site. Further, the case of *State v. Bollenbach* (1954) and the Federal Abandoned Shipwrecks Act of 1987 provide additional jurisdictional considerations when determining State oversight and "ownership" of resources defined by law as archaeological sites (Marken, Ollendorf, Nunnally, and Anfinson 1997, 3-4). Therefore, just like terrestrial archaeologists working for the State or with contract firms, underwater archaeologists are required to have the necessary education, appropriate credentials, and hold valid licenses from the Office of the State Archaeologist (OSA).



MHM's dive crew preparing to dive on an anomaly in Lake Minnetonka (by Mark Slick)

## Preface

MHM completed remote sensing side and down imaging surveys of sections of the Headwaters Mississippi River and the Minnesota River in 2010 and 2011. MHM completed the first comprehensive sonar surveys of any Minnesota lake in 2011-2012 with the thorough investigations of Lake Minnetonka (14,528 acres), White Bear Lake (2,416 acres), and Lake Waconia (3,080 acres). The study – that is still ongoing – of these three larger lakes provided MHM the opportunity to hone the research methods and data interpretation that allowed the completion of 6 different archaeological analyses during the Minnesota Suburban Lakes Survey Project (MSLS). Lake Elmo (LE, 206 acres), Lake Johanna (LJ, 213 acres), Lake Pulaski (LP, 702 acres), Lake Sylvia (LS, 1,524 acres), Medicine Lake (ML, 886 acres), and Upper and Lower Prior Lake (PL, 1,238 acres) were chosen for study, and the fieldwork was conducted from mid-September to early October 2016. MHM prepared six project reports, one for each lake documented using sonar.

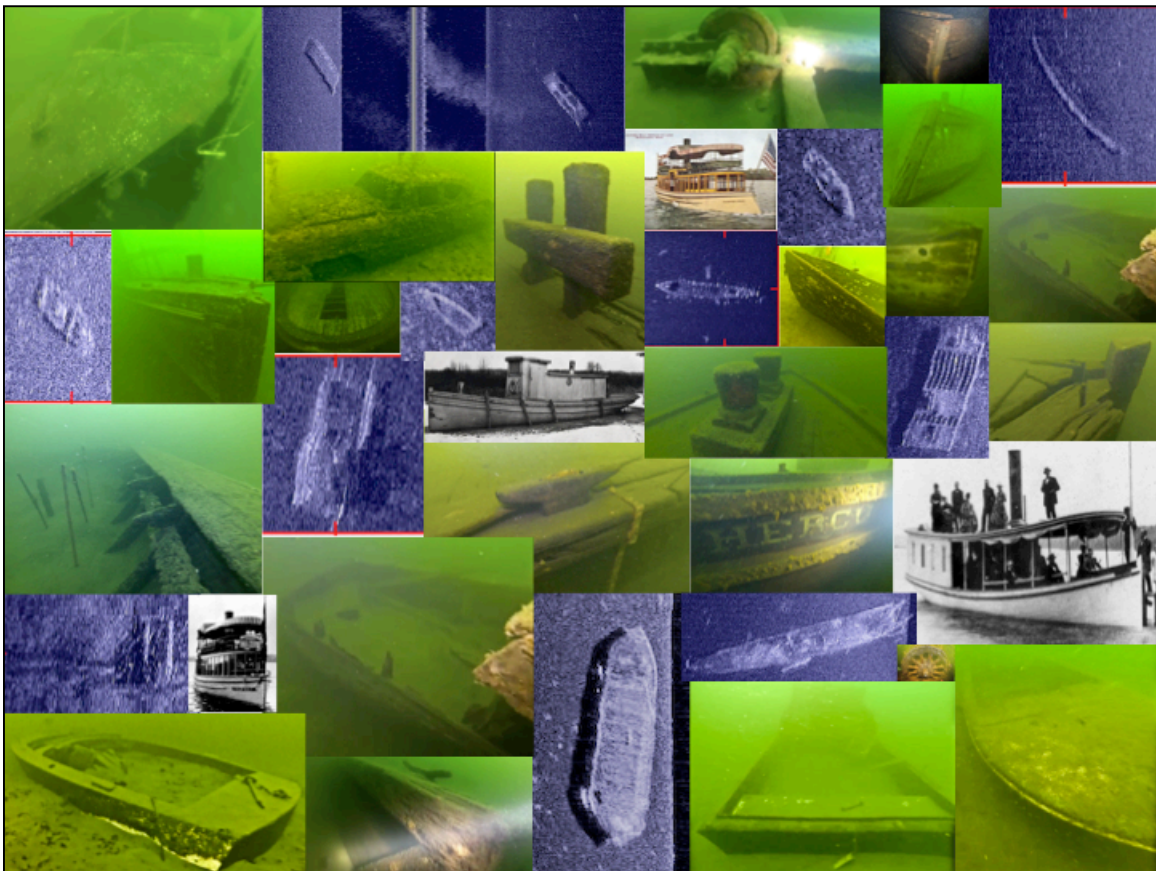


The locations of the 6 lakes surveyed during the MSLS Project.

## Research Design

The MSLS Project is a pre-disturbance Phase 1 underwater archaeological side and down imaging sonar survey of 6 lakes (mentioned above) in 5 counties – Hennepin, Ramsey, Scott, Washington, and Wright. This project is a primary step toward the identification and documentation of submerged cultural resources in Minnesota. MHM

chose the six lakes mentioned above for the MSLS Project. The purpose of the MSLS Project is to increase the collective maritime archaeological and historical knowledge of Minnesotans through the documentation of the 6 suburban lakes. The specific goal of sonar survey is the recording of anomalies on the lake bottoms and identifying their possible natures. The side and down-imaging sonar unit creates high-resolution digital images; the sonar data accumulated during the fieldwork will be reviewed and analyzed with the intention of identifying anomalies that may be human-made sites such as wrecks (dugout canoes, steamers, sailboats, rowboats, canoes, barges, motorboats), maritime infrastructure (pier/dock remains, water intakes), other maritime-related artifacts (steam boilers, fish houses), vehicles (cars, trucks, snowmobiles), and other objects. In the future, the positive identification – and significance – of the anomalies will be confirmed through underwater archaeological reconnaissance fieldwork using SCUBA, digital video, measured drawings, and maritime historical research. The 6 lakes chosen for evaluation and assessment during the MSLS Project were chosen for the MSLS Project because of their size, location, and the confirmed maritime activities occurring on and around them, determined by graphic and preliminary historical research.



A sampling of nautical archaeological and underwater sites MHM has investigated and identified in Lake Minnetonka. Similar wrecks may be recorded by the sonar unit during the MSLS Project (photos by MHM volunteers Kelly Nehowig, Ed Nelson, and Mark Slick; sonar images recorded by MHM).

The combined area of the 6 lakes is 4,769 acres. All of the project lakes are under 1,600 acres, with 4 of them under 900 acres and 2 of them under 300 acres. The size of the target lakes for the MSLS Project is significant because until now, no nautical, maritime, or underwater archaeological or historical research has been conducted in what is considered a 'smaller' lake in Minnesota. MHM chose these particular smaller lakes because, like Lake Minnetonka, Lake Waconia, and White Bear Lake, they are located outside of the Twin Cities proper, but are suburban and close enough to Minneapolis and St. Paul for day or weekend trips by lake-bound Minnesotans even in the late 19<sup>th</sup> Century. Historically, these lakes had holiday resorts on their shores that allowed local residents and visitors to use them as vacation destinations. The resorts often had fleets of sailing and rowing boats for use by their guests, and in some cases, steam launches, larger boats, and personal motorboats. Furthermore, local residents used these lakes for efficient daily transportation. Therefore, maritime activities – boat transportation and recreation that required maritime infrastructure and a terrestrial transportation system (horses, streetcars, railroads, roads, cars) to function – are comparable to Lakes Minnetonka, Waconia, and White Bear on a smaller scale. The MSLS Project will be the first systematic and comprehensive remote sensing survey of a group of smaller suburban lakes that share traits with the well-known larger suburban lakes already surveyed. With this in mind, the process of recording, locating, and identifying anomalies that may be submerged cultural resources that will ultimately be investigated archaeologically using SCUBA is even more important – the maritime history and nautical/maritime/underwater archaeology of these 6 lakes are unknowns. The data collected during the MSLS Project is the first step in the process to determine the extent of submerged cultural resources located on the bottoms of these 6 suburban lakes.

## **Methodology**

A side and down imaging remote sensing sonar survey conducted on a lake is akin to 'mowing the lawn' – transects are run either north/south or east/west depending on wind conditions, lake traffic, and the placement of obstructions such as islands, sandbars, shallow areas, docks, and piers. The length and duration of each transect cannot be known until the day of the survey and is dependent on water depth, and the presence of weeds, islands, docks, and other boats. Ideally, each transect runs north/south or east/west for orderly data analysis, but diagonal transects are often required because lakes are usually not large open squares. The GPS data received by the sonar unit's antenna is imbedded in the recording produced of each transect; this feature allows accurate and efficient anomaly location by determining its latitude and longitude. Many anomalies remain unidentified until their nature can be determined by dive reconnaissance. However, the basic nature of some anomalies can be determined by sonar data analysis with specific questions about the site or object answered using dive reconnaissance.



'Mowing the Lawn' at Lake Pulaski in 2016. Similar side and down imaging sonar survey transects were run on Prior Lake, Lake Elmo, Lake Johanna, Medicine Lake, and Lake Sylvia.

## **Results of the Minnesota Suburban Lakes Project Lake Pulaski**

### **Archaeology and History**

Lake Pulaski is located in Buffalo in Wright County northwest of Minneapolis. Woodland Period burial mounds on the west side of Lake Pulaski were described in 1880. One of the largest mounds was fancifully labeled as “a temple mound, as there are traces of fire all through it; these old settlers were probably fire worshippers”. However, smaller mounds that were disturbed and human bones identified were “thought by some to be the remains of Indians”. In actuality, 14 Woodland Period (Pre-Contact) burial mounds (21-WR-29) were observed in the early 1900s. After a group from Monticello dug into the largest of the mounds, finding numerous burials with no associated grave goods, the site was rudimentarily documented by an archaeologist. On the north side of the lake, an archaeological site (21-WR-160) characterized by a single piece of worked chert – located through shovel testing along transects – was determined to be Pre-Contact. The West Pulaski Park Site (21-HE-45) excavation consisted of 26 small units in an area just over 14 acres in size. Small finds from this habitation site included stone flakes, mammal bones, a fish scale, burned wood, and a piece of historical period farm machinery. With this collection of artifacts, the cultural affiliation associated with the site was left undetermined. Another small group of artifacts (21-WR-46) consisting of stone fragments and burned bone were discovered on the north side of Lake Pulaski, uncovered on a road leading to a boat launch. Again, no cultural affiliation or age was applied to these finds (Arzigian and Stevenson 2003, 526; Curtiss-Wedge 1915, 37; Farnham 1880, 154; Gonsior 1986a-b; Ketz 2005).

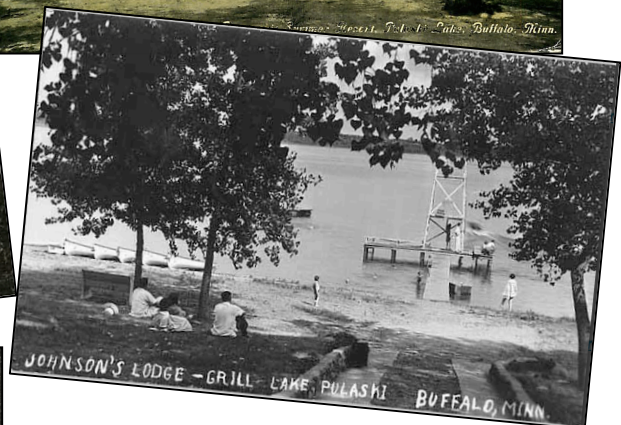
The area around Buffalo Lake and Lake Pulaski was used year-round by the Dakota for collecting fish, foraging, and hunting. As late as the 1850s, the town of Buffalo was the location of a Ho-Chunk (Winnebago) habitation, and a trading post was established on the western shore of Lake Pulaski by Edmund Brissett in 1850. Brissett and others cut a road through the ‘Big Woods’ from Lakes Harriet and Calhoun to his trading post at Lake Pulaski; the post closed in 1855. The village of Buffalo was established in 1855 and town was organized in 1858 (Curtiss-Wedge 1915, 91, 679-682).

**Resorts.** Lake Pulaski House was owned by Frank Bannochie; in April 1900 Bannochie bought 4.5 acres of land on the lake, along with ‘Ween’ Olson’s summer house to create the “ideal summer resort”. Lake Pulaski House benefited from the good infrastructure in the form of well-kept roads that led to the lake. The hotel was large and airy, and the property also had 7 cottages for guests. Significantly, the resort had “a houseboat, fifteen rowboats, a large launch, several sailboats, and in the winter some excellent iceboats. The large wharf gives opportunity for diving and other aquatic feats”. Relatives of Buffalo residents from abroad, in particular Scotland, spent full summers at Lake Pulaski House. In the late 1880s H.B. Griffing owned a hotel and cottages on Lake Pulaski that was purchased by William Melville in May 1900, along with 5-6 acres of land. In November 1903, John Dixon acquired land on Lake Pulaski and after some improvements and additions to existing buildings, opened a summer hotel with 6

cottages. Several amenities were offered to guests, including the use of different types of boats. Lake View House resort was owned and managed by Mrs. William Davies and consisted of a large main hotel and cottages. The Lake View provided “ample provisions for outdoor recreation and sport”. Thomas Crosby owned and operated a “boat livery” in Buffalo, what must be assumed is a boat works, repair shop, or storage facility. By 1910, the resort business was lucrative and some merchants suggested the use of a shuttle bus to move guests from the train station to the lake – as a money-making proposition. By the 1940s Johnson’s Lodge and Grill was a popular spot on Lake Pulaski (*Buffalo Journal* 1900a, 1910; Curtiss-Wedge 1915, 305-306, 322-323, 688).

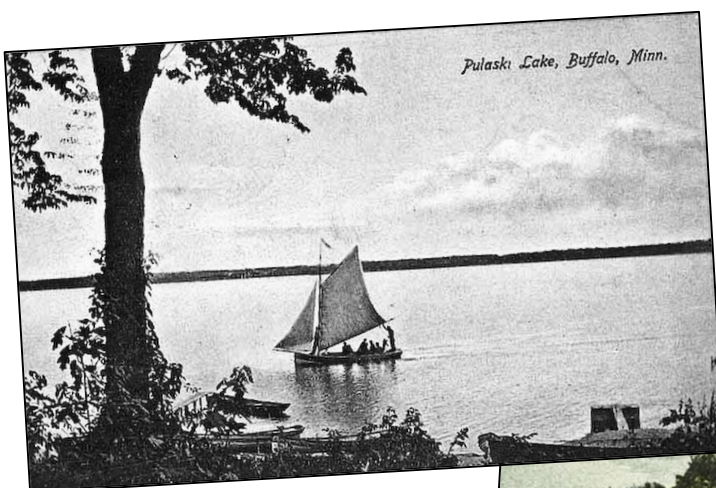


Postcards of Bannochie’s Lake Pulaski House, early 1900s.

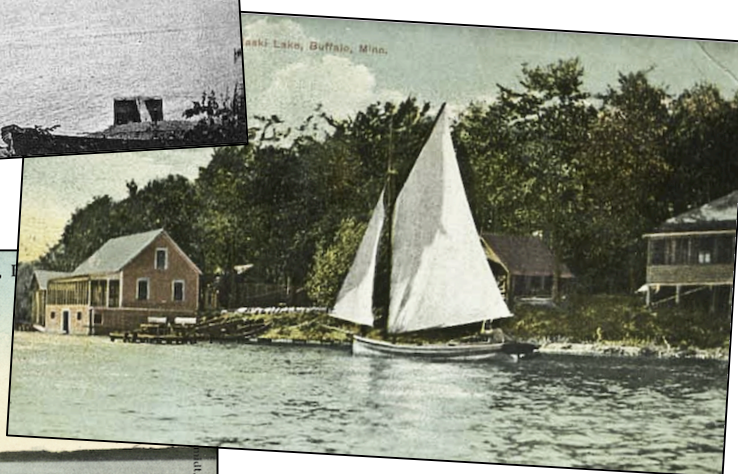


Dixon’s Resort in the early 1900s and around Johnson’s Lodge in the 1940s (MNHS MW9.3r4, MW9.1r16, MW9.1r12, digitized by MHM).

**Boating and Fishing.** Boating and fishing on Lake Pulaski in the late 19<sup>th</sup> and early 20<sup>th</sup> Centuries were inextricably linked with the resort economy, but local residents made these activities a large part of their lives as well. References to waterborne transportation in the local Buffalo newspapers from the late 1880s onward were numerous and often detailed; however, some references are not specific to activities going on at Lake Pulaski or Buffalo Lake. With this in mind, mentions of Monte Bryant's steamboat in Buffalo likely referred to its operation on Buffalo Lake, but this maritime history is indicative of activities on Lake Pulaski as well. In June 1888 Bryant's steamer provided daily trips around "the lake" on pleasure and fishing excursions. A small steamer, the *St. Albans* with a 5 horsepower engine, was listed for sale and referred to as "a nice little family boat", and even Sheriff Nugent owned a steamboat for excursions. The local cornet band provided music during a steamer excursion and "the steamboat was taken to Howard Lake...to be run there during the Sons of Veterans encampment". Rowboat fleets and the infrastructure required to accommodate large numbers of people – such as docks and piers – are mentioned, along with equipment and bait. A sudden hailstorm hit Buffalo on a weekend when "over twenty boats were on the lake" with no injuries. Another time, E.C. Hood capsized his boat and lost his wallet and some important papers (*Buffalo Journal* 1888a, 1888c-d, 1889c, 1900b-d).

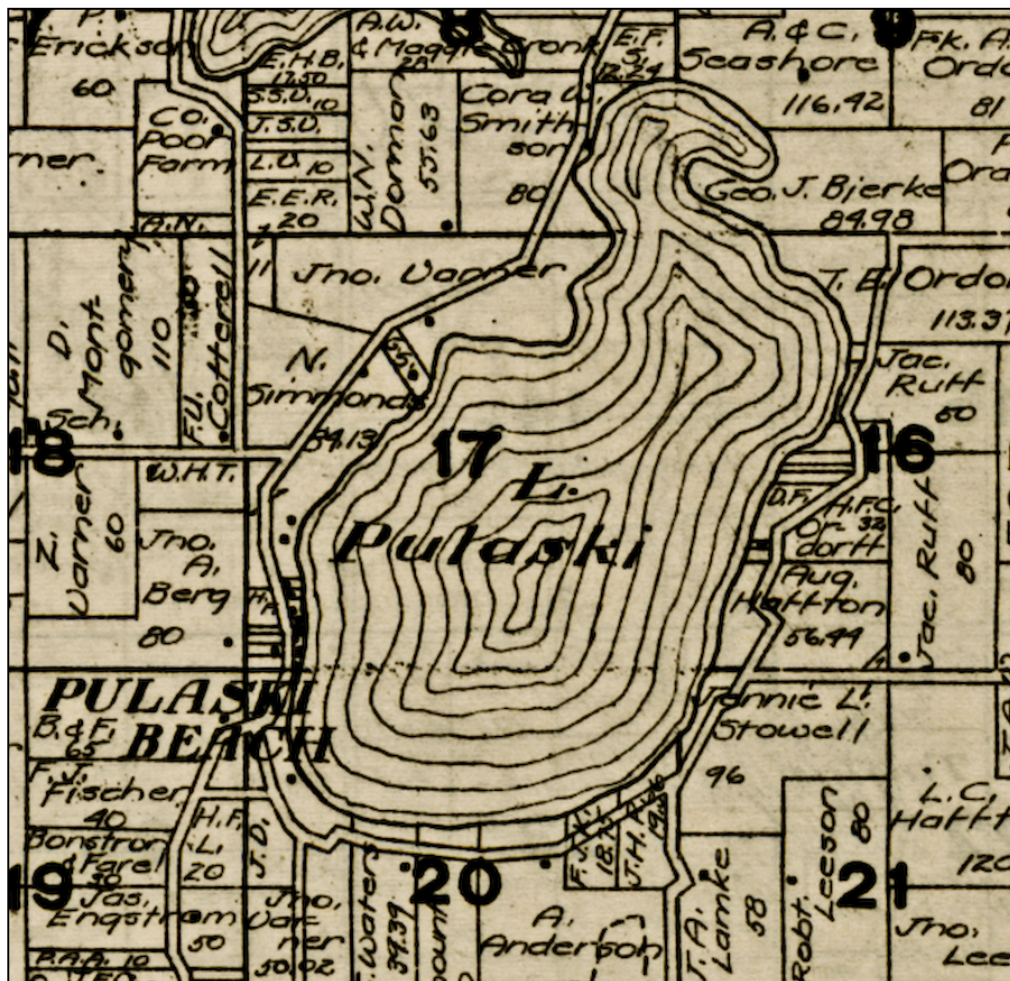


Left: A Lake Pulaski sloop on a pleasure cruise (MNHS MW9.1r18, digitized by MHM).



Above and Left: A sloop on a near Bannochie's Lake Pulaski House in the early 1900s (MNHS MW9.9BFr43, GV3.62r66, digitized by MHM).

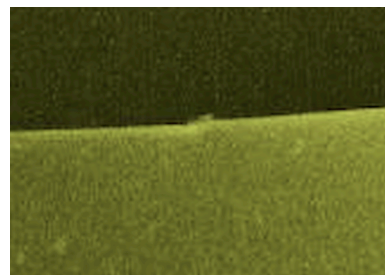
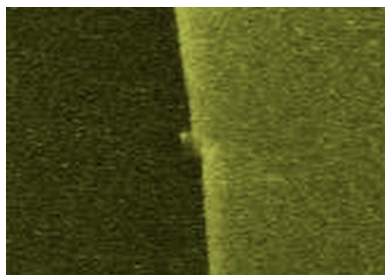
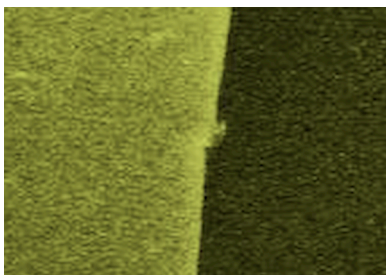
References to boating and fishing relating specifically to Lake Pulaski included statements about great fishing by men such as Thomas Hellier, the owner of the steamboat *Osprey*. Early in the summer season of 1888, fishermen reported the lack of fish in the main section of the lake, citing the coldness of the water as the reason for the fish congregating in Smithson's Bay. There may be merit to this argument since the lake is spring fed and this water source is very cold. By August 1888, the lake appears to have warmed up because Colonel Badger of Minneapolis caught 143 black bass during one Sunday on the lake. An early ice-out of Lake Pulaski on April 1, 1889 permitted Thomas Hellier to move the *Osprey* from storage in Buffalo in early May and launch her on May 10, providing a boat ride for 50 family and friends. Further, a group of 25 people from Minneapolis took advantage of the open water on both Lake Pulaski and Buffalo Lake on May 12, spending the day on the lakes. Further, H.B. Griffing's hotel was bustling earlier than usual, being packed with visitors from Minneapolis, St. Paul, Rockford, IL, and Boston. At the end of May, free boat rides on the *Osprey* were offered to "old soldiers and their families" on Lake Pulaski on Memorial Day, as well as free horse rides from the train to the steamer (*Buffalo Journal* 1888b, 1888e, 1889a-b, 1889d).



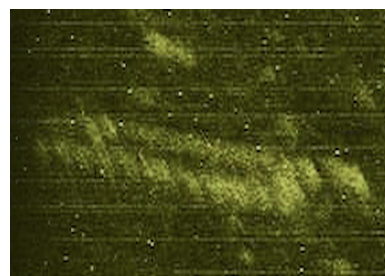
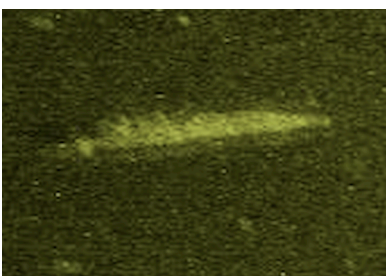
As referenced above, MHM's sonar survey transects ran north to south on Lake Pulaski (Hixson 1916).

## Lake Pulaski Sonar Survey Results

MHM has identified 47 anomalies in the sonar footage recorded during the remote sensing survey of Lake Pulaski. MHM has determined that the acoustical signatures of 3 anomalies indicate they are wrecks (A36, A39, A43), 1 is a probable overturned pontoon boat wreck (A32), another 8 are probable or possible wrecks (A1, A2, A4, A13, A17, A29, A30, A45), and 1 is a debris field (A15a-b). The anomalies below are in random order and the potential to provide significant nautical archaeological data are prioritized as High (1), Medium (2), or Low (3). These numbers will assist MHM when designing future nautical archaeological reconnaissance projects using SCUBA.

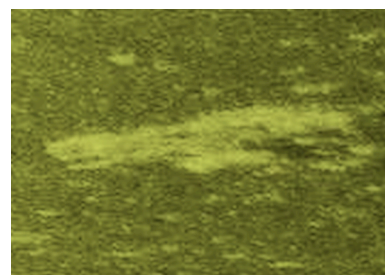
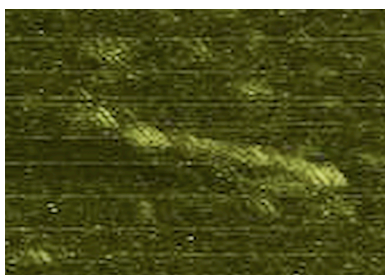


LP-A1 – Probable Wreck (1)



LP-A2 – Possible Capsized Wreck (1)

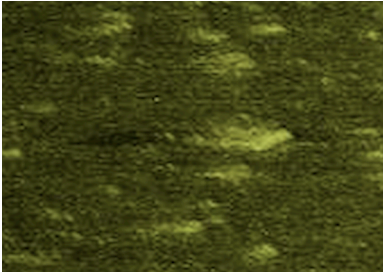
LP-A3 (2)



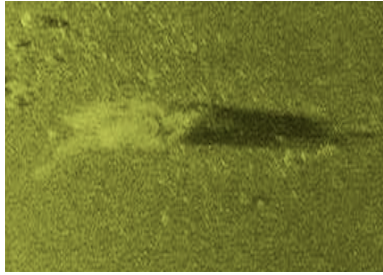
LP-A4 – Possible Wreck (1)

LP-A5 (2)

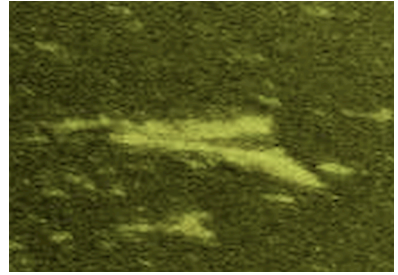
LP-A6 (3)



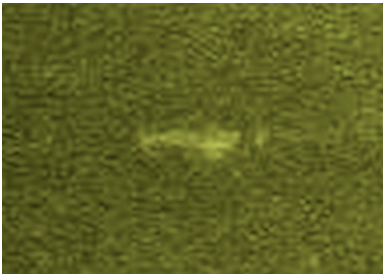
LP-A7 (2)



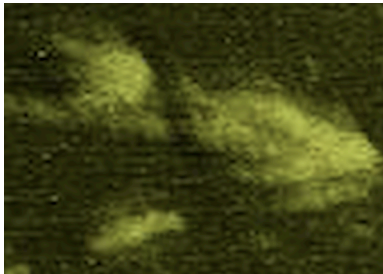
LP-A8 (3)



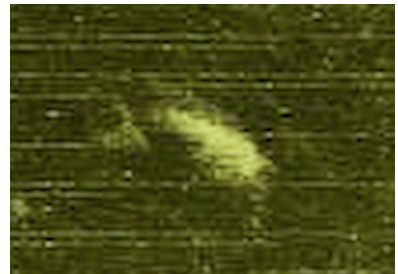
LP-A9 (2)



LP-A10 (3)



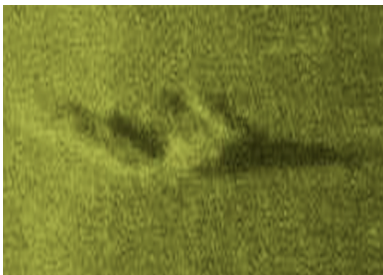
LP-A11 (1)



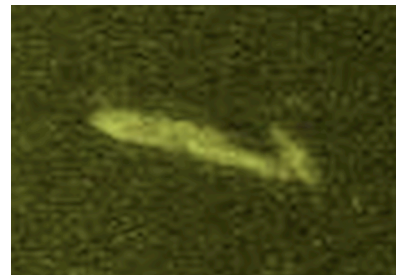
LP-A12 (3)



LP-A13 – Probable Wreck (1)



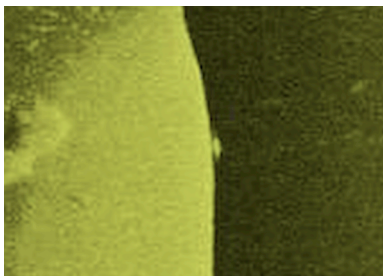
LP-A14 (2)



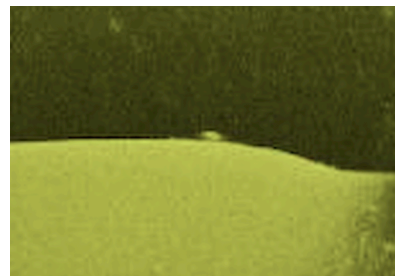
LP-A15a – Debris (3)

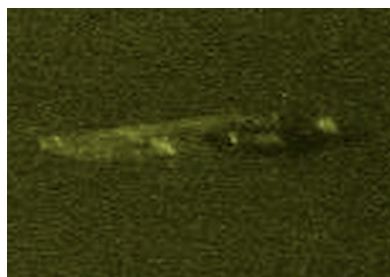


LP-A15b – Debris Field (3)

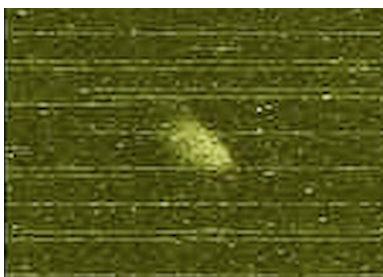


LP-A16 (1)

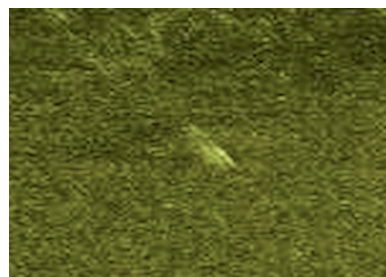




LP-A17 – Possible Wreck (1)



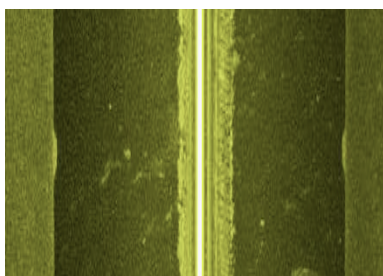
LP-A18 (3)



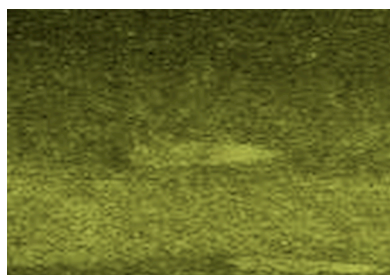
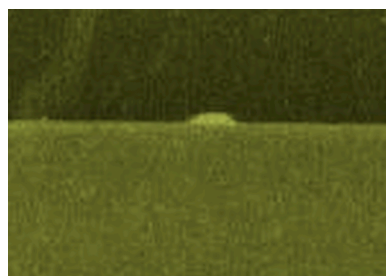
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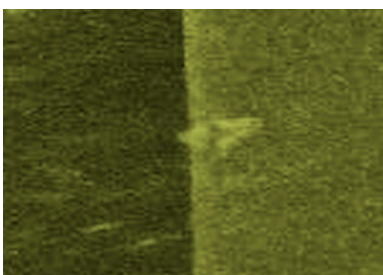
LP-A20 (2)



LP-A21 (2)



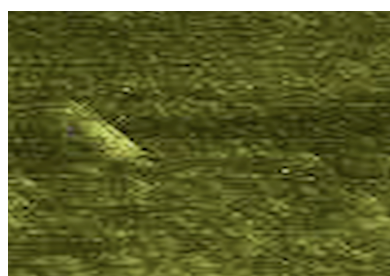
LP-A22 (1)



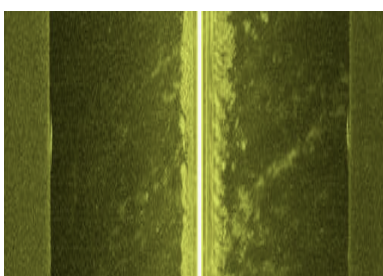
LP-A23 (2)



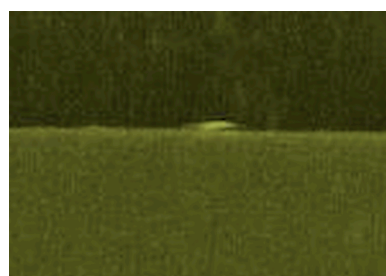
LP-A24 (2)

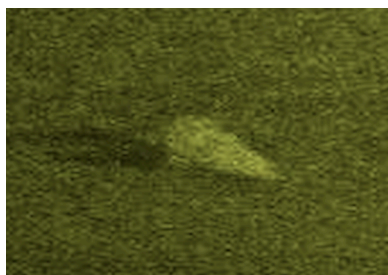


LP-A25 (1)

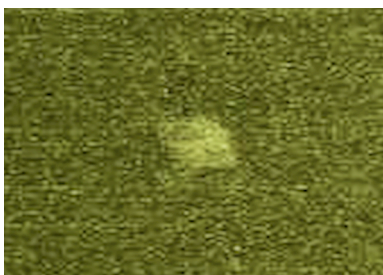


LP-A26 (1)





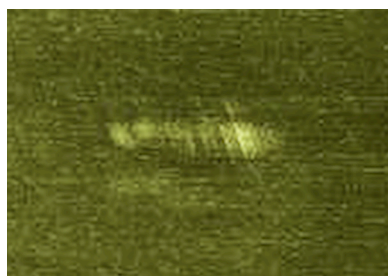
LP-A27 (2)



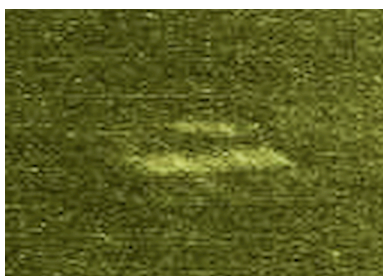
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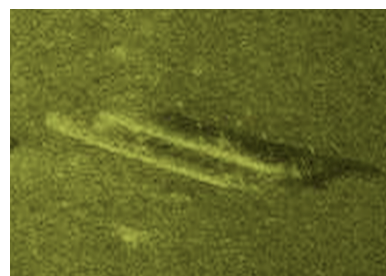
LP-A29 – Possible Wreck (1)



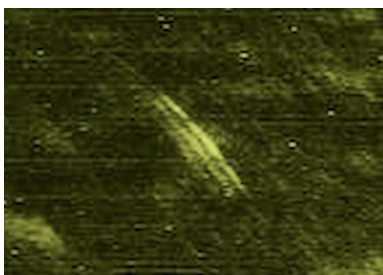
LP-A30 – Possible Wreck (1)



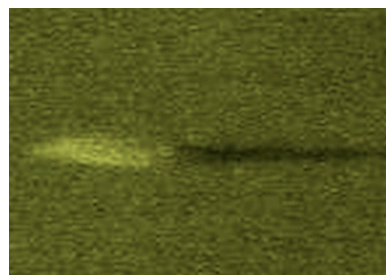
LP-A31 (1)

LP-A32 – Possible Overturned  
Pontoon Boat Wreck (1)

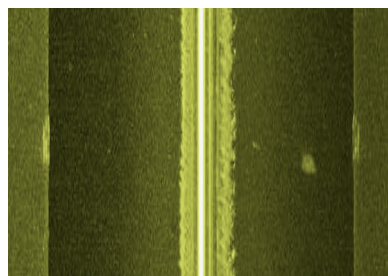
LP-A33 (1)



LP-A34 (1)



LP-A35 (2)



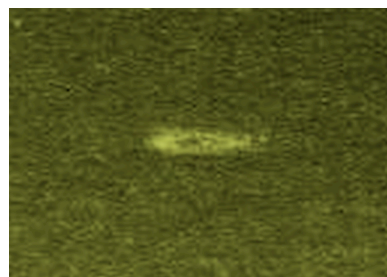
LP-A36 – Wreck (1)



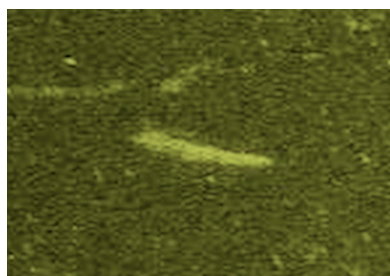
LP-A37 (2)



LP-A38 (1)



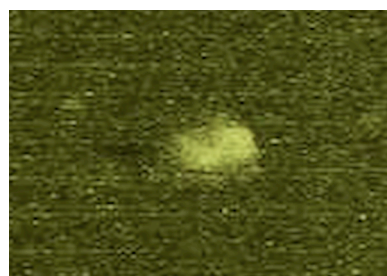
LP-A39 – Wreck (1)



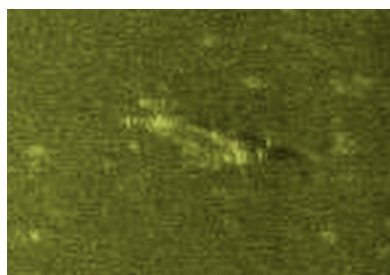
LP-A40 (3)



LP-A41 (3)



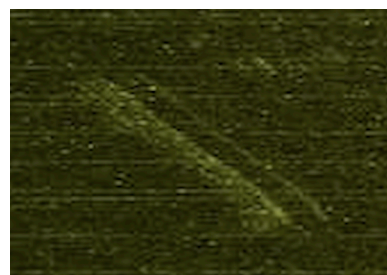
LP-A42 (1)



LP-A43 – Wreck (1)



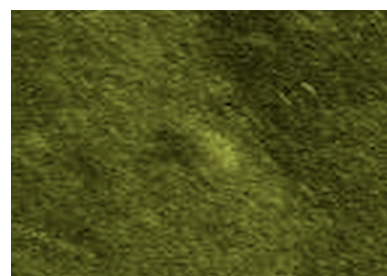
LP-A44 (3)

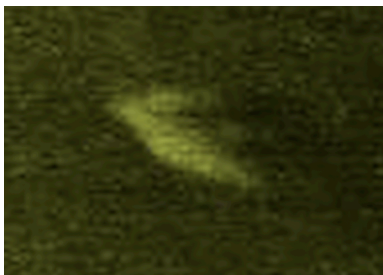


LP-A45 – Possible Capsized Wreck (1)



LP-A46 (2)





LP-A47 (1)

## Conclusion

During the Lake Pulaski Sonar Survey, MHM recorded several interesting and promising anomalies using remote sensing side and down-imaging sonar. Of the 47 anomalies, A1, A2, A4, A13, A15a-b, A17, A29, A30, A32, A36, A39, A41, A43, and A45 will produce the greatest amount of archaeological data. The MSLS Project produced interesting and significant results; MHM recognized 253 anomalies on the bottom of the 6 lakes documented during the surveys. Particularly important is the identification of 13 wrecks through their distinctive sonar signatures, another 22 possible wrecks, 6 poke nets,<sup>1</sup> 5 boat lifts/canopies, and many other maritime sites. The exact nature of the wrecks and other sites will be determined during subsequent projects centered on their investigation by nautical archaeologists using SCUBA. These future studies will greatly enhance our shared maritime history through the recognition of submerged cultural resources and the stories behind their construction and disposition on the bottom of these particular 6 Minnesota lakes. The diversity of nautical, maritime, and underwater sites so far identified by MHM in Minnesota's lakes are tangible examples of the rich maritime history of the area. Through research, diving on wrecks and anomalies to collect pertinent data, and ensuring that the collected information is accessible by the public, MHM will continue to investigate Minnesota's submerged cultural resources into the future. The results of the MSLS Project summarized above is connected to all the work that will come after its completion. It is clear – even through this Phase 1 remote sensing survey – that the types of sites that exist in the 6 small lakes documented during the project are diverse, archaeologically and historically significant, and worthy of great attention.

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<sup>1</sup>MHM has interpreted anomalies in Prior Lake, Lake Sylvia, Medicine Lake, and Lake Johanna as poke nets. Poke nets hang on poles under water and snag fish, and are well known in Scotland where they are placed in tidal zones.

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